

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TITLE OF THE INVENTION

Lifting Jack Accessory

FIELD OF THE INVENTION

The following invention relates generally to an instrumentality which operatively couples to a conventional lifting jack to transform the jack from a device which merely lifts vehicles, typically for changing flat tires, to a multi-purpose accessory.

BACKGROUND OF THE INVENTION

Lifting jacks, sometimes referred to as bumper jacks, are in fairly common use. Typically, a lifting jack includes an elongate perforated standard over which a ratcheting mechanism is disposed, and the ratcheting mechanism includes a load engaging nose. A handle, operatively coupled to the ratcheting mechanism allows the nose to move along the length of the standard. Over the course of the years, people have sought to diversify the manner in which a lifting jack can be used to find utility in areas other than its use as a bumper jack.

The following prior art reflects the state of the art of which applicant is aware and is included herewith to discharge applicant's acknowledged duty to disclose relevant prior art. It is respectfully stipulated, however, that none of these patents or prior art publications teach or in any way render obvious the nexus of the invention as set forth hereinafter.

<u>PATENT NO.</u>	<u>ISSUE DATE</u>	<u>INVENTOR</u>
761,413	May 31, 1904	Schroer
859,924	July 16, 1907	Davis
879,673	February 18, 1908	Reardon
911,638	February 9, 1909	Allgeo
958,777	May 24, 1910	Shipman
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1,104,328	July 21, 1914	Sutton
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1,179,825	April 18, 1916	Greutmann, et al.
1,321,950	November 18, 1919	Templeton
1,325,963	December 23, 1919	Templeton
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1,374,653	April 12, 1921	Harrah
1,410,380	March 21, 1922	Daniels

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2,031,815	February 25, 1936	Berman
2,165,366	July 11, 1939	Gormley
2,786,650	March 26, 1957	Bottorff
3,012,755	December 12, 1961	Acklin
3,300,184	January 24, 1967	Ragolio
3,452,575	July 1, 1969	Williams, et al.
3,831,892	August 27, 1974	Herman
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3,991,977	November 16, 1976	Penttila
4,061,168	December 6, 1977	Fariss, Jr.
Des. 248,460	July 11, 1978	Dunn, et al.
4,203,578	May 20, 1980	Margueratt
4,379,546	April 12, 1983	McIntosh
4,564,173	January 14, 1986	Atherton, et al.
4,568,064	February 4, 1986	Reinhardt
4,953,606	September 4, 1990	Brown, Jr.

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

Jackall Products product brochure "Jackall 8000 Series", entire brochure printed from the internet, June 30, 1999

When a lifting jack is to be used as a bumper jack, it typically is provided with a platform at its lowermost surface to engage the ground and provide a stable platform as the lifting jack is utilized to raise the car. However, if the car is being elevated at an area other than its center point, the lifting jack experiences a load which is not truly vertical and it is possible for a bumper jack to experience severe angulation and a force vector not axially aligned with the standard causing the bumper jack to slip, creating a hazardous situation. In addition, bumper jacks suffer from further instability when being deployed upon ice, irregular surfaces, and surfaces which are yielding (i.e., something other than pavement, like sand, gravel, mud, etc.). The accessory associated with the instant invention not only provide

enhanced performance in these areas where the lifting jack has known shortcomings, but also lends itself to utilization in a multiplicity of other ways for providing added flexibility to the lifting jack.

SUMMARY OF THE INVENTION

The instant invention is distinguished over the known prior art in a multiplicity of ways. The accessory is configured as a sleeve, which is dimensioned to slideably overlies the standard of a conventional lifting jack and can move along the length of the standard, since its inner diameter provides clearance for the standard to move therewithin with minimal friction. Once located on the standard at an appropriate spot, the accessory can be fixed into position on the standard by means of a pair of holes which are axially aligned and pass through the sleeve. A locking pin is dimensioned to project through the holes on the sleeve and through a perforation commonly found on the lifting jack so that the position of the accessory is fixed on the standard. The sleeve has opposite first and second ends. The first end includes a purchase area which lends itself to work in concert with the nose on the ratcheting mechanism of the lifting jack to provide loads either in compression or tension. The second opposite end of the accessory includes a plurality of spikes so that when the accessory is located at an extremity of the standard, the spikes provide enhanced stability when engaging soft materials, thereby providing a more secure grip of the lifting jack at that area.

OBJECTS OF THE INVENTION

A primary object of the present invention is to provide a new and novel accessory for a lifting jack.

A further object of the present invention is to provide a device as characterized above which is easy to use, extremely safe and lends itself to mass production techniques.

A further object of the present invention is to provide a device as characterized above which can provide compressive and tensile loading.

A further object of the present invention is to provide a device as characterized above which includes a support area having a plurality of spikes which enhance the stability of the device when used in conjunction with a lifting jack.

Viewed from a first vantage point, it is an object of the present invention to provide a lifting jack accessory in which the lifting jack includes an elongate, perforated standard, a ratcheting mechanism overlying the standard, the ratcheting mechanism including a load engaging nose operatively coupled to a ratcheting handle, the accessory comprising, in combination: a sleeve dimensioned to slideably overlie the standard and translate along a length of the standard, a pair of holes, axially aligned and passing through the sleeve, a pin dimensioned to project through the holes to fix the sleeve on the standard by the pin passing through one

perforation of the standard, a purchase area at a first end of the sleeve, and a plurality of spikes at a second end of the sleeve.

These and other objects will be made manifest when considering the following detailed specification when taken in conjunction with the appended drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of the apparatus according to the present invention.

Figure 1A is an alternative to that which is shown in figure 1.

Figure 1B details one end of figure 1.

Figure 1C details one configuration of teeth.

Figure 1D details another configuration of teeth.

Figure 2 is a sectional view along lines 2-2 of figures 1 indicating the cooperation of a locking pin in association with the device according to the present invention.

Figure 3 shows the device in use on a lifting jack performing one manipulation.

Figure 4 shows the device in association with a lifting jack providing a second type of manipulation.

Figure 5 shows the device according to the present invention being used in an emergency situation accessing a car door.

Figure 6 shows the apparatus used in another configuration in conjunction with its use as a bumper jack.

Figure 7 shows the device in a further configuration in which a compressive load is being provided.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to the drawings, wherein like reference numerals denote like parts throughout the various drawing figures, reference numeral 10 is directed to the accessory for a lifting jack according to the present invention.

In its essence, the accessory 10 includes a sleeve 50 integrally formed with an implement adjunct 60 thereto.

More particularly, the sleeve 50 is formed as a hollow construct having four sides, a first and second wide side 2 each held in parallel spaced relationship and bounded at extremities by spaced parallel narrow sides 4. The juncture between all sides is preferably provided with radiused corners 6 so that a smooth contour is provided. The hollow 52 that is defined by the peripheral wide and narrow sides 2, 4, respectively, is dimensioned to receive a standard which is a common feature on conventional lifting jacks. Lifting jacks typically include a plurality of holes along the length of the standard. These hollows allow the sleeve 50 to be located along the length of the standard by virtue of holes 44 which pass through each of the wide sides 2. The holes 44 are axially aligned to allow a quick release pin 42 to pass therethrough. The quick release pin 42 is constrained to stay on the accessory 10 by means of a lanyard 38 having a first end which connects to a first end of the pin 42 via a pin aperture 43 which receives a circular locking clip 40. The second end of the lanyard, shown in figure 2 attaches to a removeable positive locking clip 46 which passes through a complementarily formed aperture 43 on a second end of pin 42 so

that collectively the pin, clip, lanyard assembly retains the sleeve in fixed position on the standard. The lanyard 38 is retained on the adjunct 60 by being threaded through a lanyard retaining fenestration 36.

One of the narrow sides 4 supports the integrally formed normally projecting adjunct 60. The adjunct 60 is formed as a wall 8 which includes a purchase area at one extremity that includes a rounded nose 20a (figures 1 and 1C) and a plurality of teeth 22. The remote extremity of the adjunct includes at least one spike 18 formed adjacent a notch 25 (preferably V-shaped) that transitions to the narrow side 4 by means of a shoulder 26. Spike 18 serves as a fixture spur. A surface 24 that extends from the nose 20 to the spike 18 has a flat sloped contour that narrows as it extends from the nose 20 to the spike 18. The nose 20a is preferably contoured as having a rounded periphery as shown in figure 1C. The nose could terminate in an edge coplanar with surface 24 and having a widened "chisel" head 20c (figure 1A) or a spike, such as 18. Figure 1D reflects a "chisel" head transverse to the figure 1B version with the chisel head 20b facing away from the device 10. Somewhat in the same plane as teeth 22.

The adjunct 60 also includes a clevis hole 16 which provides a convenient attachment point for rigging shackles as will be explained. In addition, the adjunct 60 includes a chain slot having a wide rectangular hollow 12 to receive the chain and a narrowed chain lock 14 with a depth comparable to a chain link's thickness.

The chain slot 12 is shown closer to teeth 22 than clevis hole 16. Both are centrally located on wall 8.

The sleeve 50 has at one extremity (figure 1B) four spikes 30 preferably having flattened ends all lying in a horizontal plane and at corners of sleeve 50 to provide secure footing when this end is placed on a support surface. The flattened spikes 30 are interrupted one from the other by means of "V" shaped canted walls, a pair of long canted walls 28 on the wide sides 2 and smaller canted walls 32 on the narrow sides 4.

Figure 1 shows a version in which the opposite end from the spikes has a flattened surface 34. Figure 1A shows a version in which the serrated teeth 22 of figure 1 extend along the entire face and bear the reference numeral 54. Note also that the teeth all lie in the same plane in the figure 1A version. Figure 1C shows teeth 22a which come to a point. Figure 1D shows flattened teeth 22b and a pointed nose 20b (figures 1A and 1D).

In use and operation, and considering figures 3 through 7, various illustrative forms of manipulation of the accessory 10 can be explored. These examples are not exhaustive of possible uses.

In figure 3, the standard S fixes the accessory 10 thereon by means of the pin 42 discussed above. A rigging shackle RS is fastened to the clevis hole 16. The ratcheting mechanism R and handle H of the conventional jack is located as shown to the left of the drawing in figure 3 and the nose N receives a chain C thereabout.

Cranking the handle H can pull the chain C in the direction of the arrow A with the standard S firmly held by the accessory 10.

In figure 4, the chain C includes one link received in the chain lock 14. The handle H, when manipulated, will cause the standard to move in the direction of the arrow A moving the accessory 10 therewith since it is locked onto the standard.

Figure 5 reflects an emergency situation in which it is desired to force a door. In this context, the accessory 10 is oriented such that the teeth 22 are located on one edge of a door of a vehicle. By moving the handle H on the jack, a force is provided along the double ended arrows B on the window periphery.

With respect to figure 6, the accessory 10 is fixed on the standard as explained above with the flattened spikes 30 engaging the ground. Where the surfaces is yielding, the spike will provide an increased grip as a downward force F is exerted. The penetration of the spikes 30 into the ground provides a more stable contact with the ground.

Figure 7 shows an embodiment in which the accessory 10 is fixed on the standard S and the jack handle H is manipulated to provide a force F on an object interposed between the nose N of the ratcheting mechanism and the teeth 22 of the accessory 10. The compressive force will be exerted on the object O interposed therebetween.

Moreover, having thus described the invention, it should be apparent that numerous structural modifications and adaptations may be resorted to without

departing from the scope and fair meaning of the instant invention as set forth hereinabove and as described hereinbelow by the claims.